washer (8) to obtain washed pulp, and treating the washed pulp in an oxygen delignification stage (10) whereby the pulp digestion and brown stock washing processes mainly employ counter-current washing in which clean wash liquid is brought to the end of the process and filtrate of the process is transferred counter-currently relative to the flow direction of the pulp through several washing stages at least partly to the digester (2) and from there further to chemical recovery CR, and wherein the method further comprises lowering the COD-level in the oxygen delignification stage (10) according to the following steps:

a) before a process stage following the oxygen delignification stage (10) and the washer (12) of the delignification stage in the flow direction of the pulp, separating a portion LI from the wash liquid/filtrate to be recycled counter-currently relative to the flow direction of the pulp;

b) treating the portion LI of the filtrate in a separation device (114, 214, 314, 414, 514) in order to produce two fractions CC and CD having a concentration difference in the liquid phase measured by a difference in at least one of dry solids, COD, and alkali;

c) returning the fraction CC having a lower concentration either substantially to the same point in the process from which the portion LI of the filtrate was extracted according to step (a), or to some other point in the process in order to lower the COD-level in the oxygen delignification stage;

d) directing the fraction CD having a higher concentration either to the flow passing to the chemical recovery CR, the digestion plant or to a point in the process in which at least one of the dry-solids, COD and alkali content of the liquid phase is at least as high as that of the fraction CD.

2. (Amended) A method as claimed in claim 1, wherein the filtrate LI of step a) is obtained from a flow passing from the digester (2) to the chemical recovery CR, and

wherein the fraction CD of step d) is returned to the flow passing to the chemical recovery CR.

3. (Amended) A method as claimed in claim 2, wherein the fraction CC of step c) is returned either to a flow BSF passing from the brown stock washer (8) to the digester (2), or is used as wash liquid in the brown stock washer (8), in the washer (12) following the delignification stage (10), or in the washer (16) following the screen plant (6).

4. (Amended) A method as claimed in claim 1, wherein the filtrate LI of step a) is obtained from filtrate flow passing to the brown stock washer (8) preceding the delignification stage (10).

5. (Amended) A method as claimed in claim 4, wherein the fraction of step c) is returned to the wash liquid flow passing to the brown stock washer (8) and wherein the fraction of step d) is returned either to the flow BSF passing from the brown stock washer (8) to the digester (2), or directly to the flow passing to the chemical recovery CR.

6. (Amended) A method as claimed in claim 1, wherein step a) includes taking the filtrate LI from circulation waters subsequent to the digester (2), and passing the fraction CD of step d) to liquid circulations of the digester (2) or directly to the chemical recovery CR, and returning the fraction CC of step c) to be used as wash liquid in the brown stock washing (8) or in the wash (12) subsequent to the delignification stage (10).

7. (Amended) A method as claimed in claim 1, wherein the washer either extracts at least two filtrates (FC, FD) having different concentrations or to which at least two filtrates having different concentrations are introduced.

8. (Amended) A method as claimed in claim 7, the fraction of step c) is returned to be used as wash liquid in the washer with wash liquid FC being introduced thereto and having the lower concentration.

9. (Amended) A method as claimed in claim 7, wherein the filtrate LI of step a) is taken from at least one filtrate FC of the washer.

10. (Amended) A method as claimed in claim 7, wherein the filtrate LI of step a) is taken from at least one filtrate FC of the washer having the higher concentration.

11. (Amended) A method as claimed in claim 1, wherein the separation device (114, 214, 314, 414, 514) is a membrane separator.

12. (Amended) A method as claimed in claim 1, wherein the separation device is an evaporator (114, 214, 314, 414, 514), and wherein the fraction having the lower concentration is condensate and the fraction having the higher concentration is concentrate.

13. (Amended) A method as claimed in claim 1, wherein the volume of the fraction CC having the lower concentration returned at stage c) from the separation treatment is no greater than 6 m^3/adt.

14. (Amended) A method as claimed in claim 1, wherein the liquid to be treated in step b) is white liquor flowing from the chemical recovery to the digester (2).

15. (Amended) A method as claimed in claim 1, wherein soap is separated from the fraction obtained from step b) and having the higher dry solids content.

16. (Amended) A method as claimed in claim 1, wherein pulp is further treated in a bleaching stage BL following the oxygen delignification stage so that at least part of the fraction CC to be returned at step c) is passed to a washer or press of the bleaching stage.

17. (Amended) A method as claimed in claim 16, wherein at least a part of the wash liquids used in the bleaching stage BL is passed counter-currently up to the digester (2).